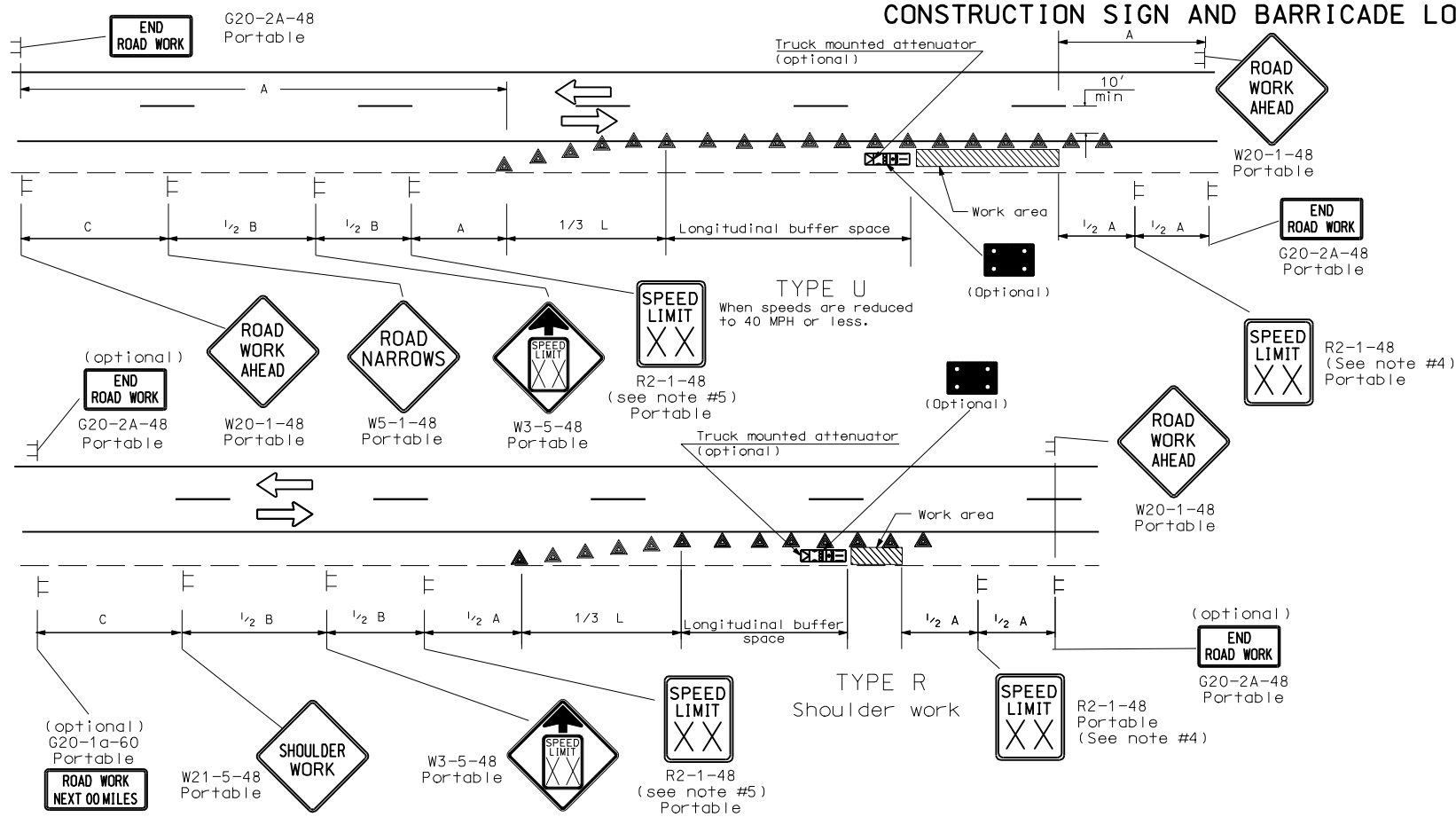
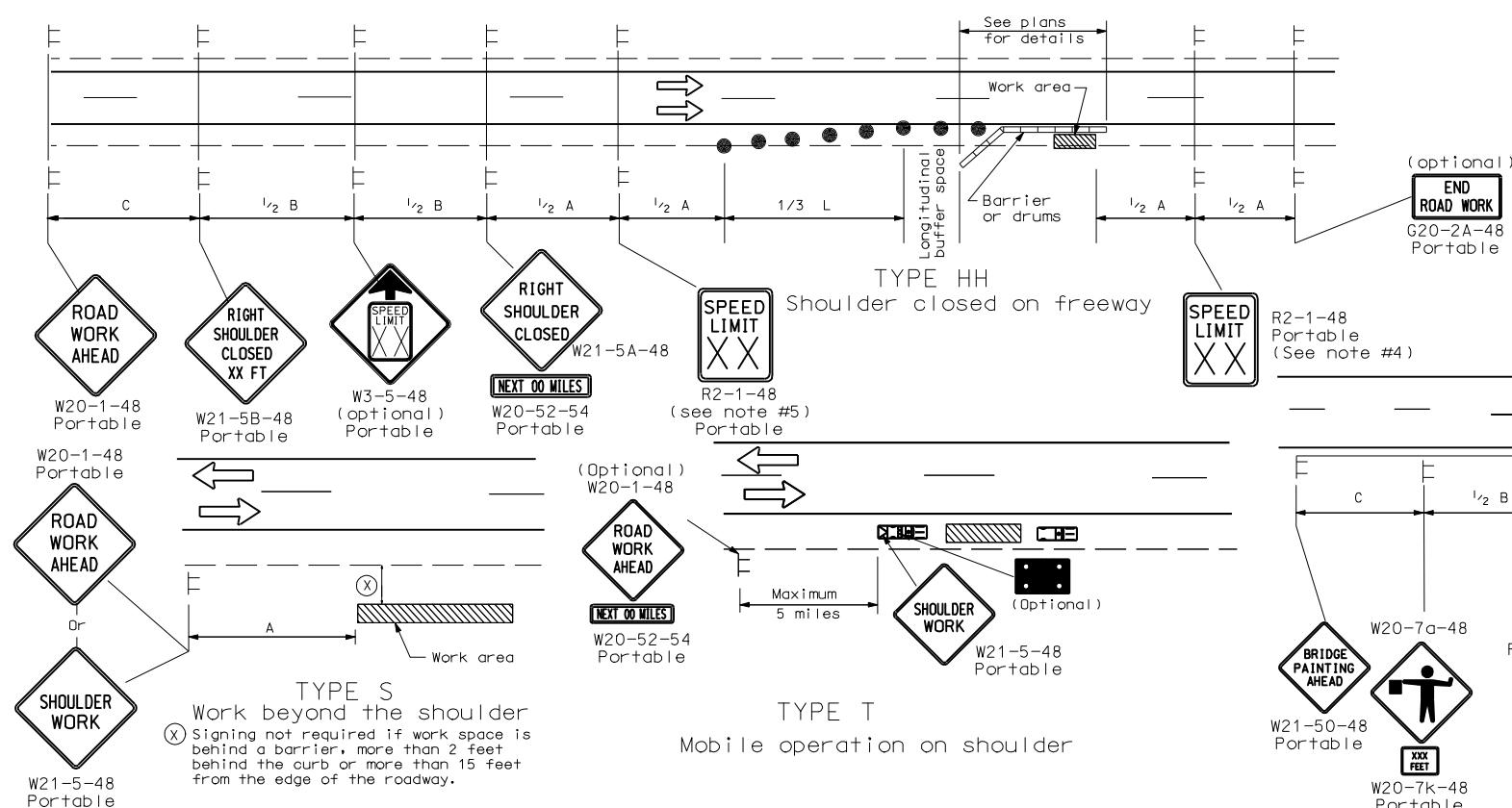


## CONSTRUCTION SIGN AND BARRICADE LOCATION DETAILS

- Notes
- Variables  
 S = Numerical value of speed limit or 85th percentile.  
 W = The width of the taper.  
 L = Minimum length of taper, or  $S \times W$  for freeways, expressways, and all other roads with speeds of 45 mph or greater, or  $W \times S^2/60$  for urban, residential, and other streets with speeds of 40 mph or less.
  - Delineator drums, or cones used for tapering traffic shall be spaced at dimension "S".  
 Delineator drums, or cones used for tangents shall be spaced at 2 times "S".
  - Sequencing Arrow Panels  
 Type A shall be used on roadways with slow moving traffic speeds and low volume (25 mph and 750 ADT or less).  
 Type B shall be used on roadways with moderate traffic speeds and volumes (40 mph and 5000 ADT or less).  
 Type C shall be used on roadways with high traffic speeds and volumes (over 40 mph and 5000 ADT).  
 The speed limit shall be re-established. The exact speed limit shall be determined in the field, dependent on location and conditions.
  - The reduced speed limit shall be determined dependent on the in place speed limit before construction. The speed limit reduction should not exceed 10 mph below the existing speed limit, unless the design speed of the work zone feature has been reduced below the 10 mph. In this case, the speed limit reduction shall not exceed 30 MPH. Where speed limits are to be reduced more than 30 MPH, a second speed limit sign shall be installed with the desired speed reduction but shall not exceed 30 MPH. The second speed limit sign shall be placed at 1/2 B.
  - When warning signs are used in urban areas and the signs are not portable, flags shall be installed. The flags shall be 24 inches square, mounted perpendicular to the edges of the diamond sign, and at such a distance above the edge so that when the flag is limp it will not touch the sign. Rural areas will not require flags.
  - Existing speed limit signs within a reduced speed zone shall be covered.
  - The contractor has the option of using portable sign supports in lieu of post mounted sign as shown on the standard drawings as specified in section 704.03 C.



Longitudinal Buffer Space	
Speed (mph)	Length Min (feet)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820



ADVANCE WARNING SIGN SPACING			
Road Type	Distance Between Signs Min. (ft)		
	A	B	C
Urban - Low Speed (30 mph or less)	150	150	150
Urban - Low Speed (over 30 to 40 mph)	280	280	280
Urban - High Speed (over 40 mph to 50 mph)	360	360	360
Rural - High Speed (over 50 mph to 65 mph)	720	720	720
Urban Expressway and Freeway (55 mph to 60 mph)	850	1350	2200
Rural Expressway and Freeway (70 mph to 75 mph)	1000	1500	2640
Interstate/4-Lane Divided (Maintenance and Surveying)	750	1000	1500

KEY	
—	Type I barricade
—	Type II barricade
—	Type III barricade
—	Sign
●	Delineator drum
▲	Cones
▨	Work area
⏏	Flagger
○○	Sequencing arrow panel
II	Type A delineator or vertical panels back to back

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-1-86	
REVISIONS	
DATE	CHANGE
10-01-99	General revisions
10-04-99	Type HH barrier
11-15-99	Add taper width & note
03-15-01	Revised note 2
07-19-02	Reversed End Road Work & Speed Limit signs
07-25-03	Revised R2-1a and W20-1
04-01-04	Removed fee sign & rev warning & buffer spacing rev note 5
12-01-04	PE Stamp added
06-29-05	Replaced R2-5a with W3-5 Rev. Adv. Warning Table, Rev. Note 5

This document was originally issued and sealed by Mark S Gaydos Registration Number PE-4518, on 06/29/05 and the original document is stored at the North Dakota Department of Transportation